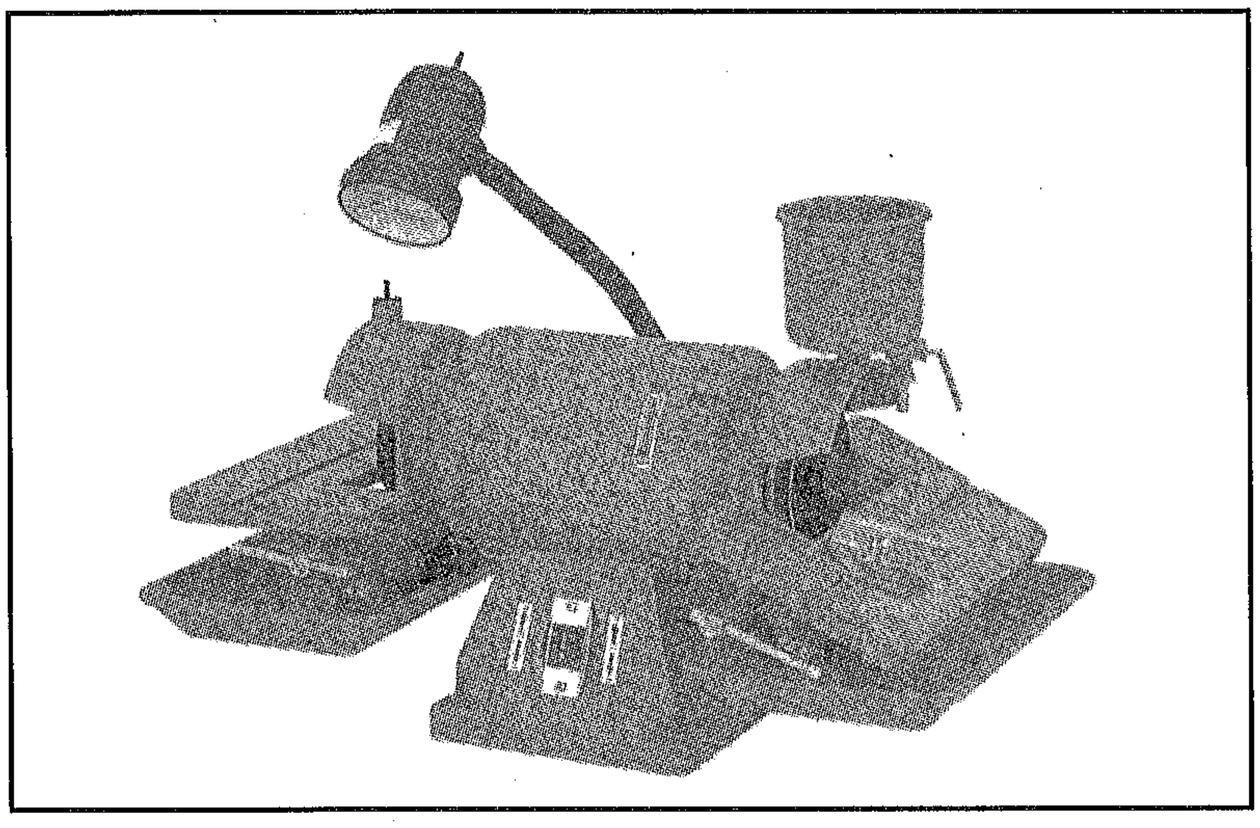
CENTRAL MACHINERY INDUSTRIAL®

6" TOOL GRINDER – 1/2 HP

Model 46727

PRODUCT INFORMATION



Distributed Exclusively by HARBOR FREIGHT TOOLS®

3491 Mission Oaks Blvd., Camarillo, CA 93011
Visit our Web site at http://www.harborfreight.com

Copyright© 2002 by Harbor Freight Tools®. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools®.

For technical questions please call 1-800-444-3353

SPECIFICATIONS TABLE

Item	Description
Electrical Requirements	1/2 HP, 115V, 60Hz, 6.3 Amps, Single Phase, 3,400 RPM.
Construction	Cast Iron Base, Motor Housing, Catch Basins. Cast Aluminum Table.
Water Cup	Adjustable.
Wheel Size	6" Maximum Diameter.
Arbor Size	1.250" Diameter.
Rotation Arrows	Duel Arrows.
Overall Dimensions	15" W x 25" L x 16" H w/Water Cup.
Base Dimensions	8" W x 8-1/2" L.
Mounting Holes	4 at 5/16" (.30") Diameter.
Table Dimensions	6-3/4" W x 12" L.
Table Surface	Grounded.
Net Weight	97 Pounds.

SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, operating, inspection, maintenance, and cleaning procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

SAFETY WARNINGS AND PRECAUTIONS

1. **KEEP WORK AREA CLEAN AND DRY.** Cluttered, damp or wet work areas invite injuries.

2. **KEEP CHILDREN AWAY FROM WORK AREA.** Do not allow children to handle this product.

3. **STORE IDLE EQUIPMENT.** When not in use, tools and equipment should be stored in a dry location to inhibit rust. Always lock up tools and equipment and keep out of reach of children.

4. **DO NOT USE THIS PRODUCT IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgement or reflexes are impaired while taking drugs. If there is any doubt, do not attempt to use this tool.

5. **USE EYE AND HEARING PROTECTION.** Wear ANSI approved safety impact eye glasses, full face shield and ANSI approved hearing protectors when working with this product. ANSI approved safety impact eye glasses and hearing protectors are available from Harbor Freight Tools.

6. **DRESS SAFELY.** Non-skid footwear or safety shoes should be used when working with this product. Do not wear loose clothing or jewelry as they can become caught in moving parts. Wear a protective hair covering to prevent long hair from becoming caught in moving parts.

7. **INDUSTRIAL APPLICATIONS MUST FOLLOW OSHA REQUIREMENTS.**

8. **DO NOT OVERREACH.** Keep proper footing and balance at all times to prevent tripping, falling, back injury, etcetera.

9. **STAY ALERT.** Watch what you are doing at all times. Use common sense. Do not use this tool when you are tired or distracted from the job at hand.

10. **CHECK FOR DAMAGED PARTS.** Before using this product, carefully check that this machine will operate properly and perform its intended function. Check for damaged parts and any other conditions that may affect the operation of this machine. Replace or repair damaged or worn parts immediately.

11. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Only use accessories intended for use with this product. Approved accessories are available from Harbor Freight Tools.

12. **MAINTAIN THIS PRODUCT WITH CARE.** Keep this tool clean and dry for better and safer performance.

13. **MAINTENANCE:** For your safety, service and maintenance should be performed regularly by a qualified technician.

14. **USE THE RIGHT PRODUCT FOR THE RIGHT JOB**. There are certain applications for which this product was designed. Do not use a small tool or attachment to do the work of a larger industrial tool or attachment. Do not use this product for a purpose for which it was not intended.

15. **WARNING:** The warnings, cautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SPECIFIC PRODUCT WARNINGS AND PRECAUTIONS

1. **<u>ALWAYS</u> DISCONNECT THIS MACHINE FROM ITS ELECTRICAL SUPPLY SOURCE BEFORE PERFORMING ANY SERVICES OR MAINTENANCE.** Make sure to turn off the Tool Grinder prior to cleaning it, changing work pieces and/or tool accessories, etcetera.

2. **DO NOT LEAVE THIS MACHINE RUNNING UNATTENDED.** Turn off the power and wait until the machine stops running before leaving.

3. **GROUND THIS MACHINE.** The electrical Power Cord for this product is equipped with a grounded, 3-prong Plug (part #69). Make sure this product is always plugged into a grounded, 115 Volt, 3-hole electrical receptacle.

4. **MAKE SURE THE SWITCH (part #50) IS IN THE "OFF" POSITION BEFORE PLUGGING IN THE POWER CORD (part #69).**

5. **DO NOT ABUSE THE POWER CORD (part #69).** Do not yank the Power Cord to disconnect it from the electrical receptacle. Do not move this machine with the Power Cord in the outlet. Keep the Power Cord away from heat, oil, and sharp edges.

6. **NEVER USE THE SIDES OF A GRINDING WHEEL TO GRIND OBJECTS.**

7. **WHEN USING EXTENSION CORDS:** The extension cord must have a minimum wire size depending on the amperage of the tool and length of the extension cord. **This Tool Grinder is rated at 6.3 motor amps.** The extension cord size is determined by its AWG (American Wire Gauge) rating. The smaller the gauge, the greater the cable's capacity. The amount of cords used does not matter – total length determines the minimum AWG rating. Every cord must meet the AWG rating. Use **Figure A** below to determine what AWG rating is required for your situation. Cord length is rated in feet. Harbor Freight Tools can supply UL listed and rated cords in multiple AWG ratings if needed. **(See Figure A.)**

AWG RATING CHART

CORD LENGTH →	***25'***	***50'***	***75'***	***100'***	***125'***	***150'***	***175'***	***200'***
AMPS	***AWG***	***AWG***	***AWG***	***AWG***	***AWG***	***AWG***	***AWG***	***AWG***
0-10.0	18	18	16	16	14	14	12	12
10.1-13.0	16	16	14	14	14	12	12	12
13.1-15	14	14	12	12	12	12	12	—
15.1-18	14	12	12	12	12	12	—	—

FIGURE A

8. **KEEP ALL GUARDS IN PLACE AND IN WORKING ORDER.**

9. **REMOVE ADJUSTING KEYS AND WRENCHES.** Check to make sure all adjusting tools are removed from this product before turning it on.

10. **MAINTAIN A SAFE WORK ENVIRONMENT.** Do not use this product in or near damp or wet areas. Do not expose this product to rain. Keep the work area well lit. Make sure there is adequate surrounding workspace. Use this product in a well ventilated area. **Do not operate this product in the presence of flammable liquids, gasses, or dust**. To avoid accidental electric shock, do not let your body come in contact with grounded surfaces such as pipes, radiators, ranges, etcetera.

11. **DO NOT FORCE THE EQUIPMENT.** This Tool Grinder will do the work better and safer at the speed and capacity for which it was designed.

12. **AVOID UNINTENTIONAL STARTING.** Make sure you are prepared to begin work before turning the Switch (part #50) on.

13. **NEVER ATTEMPT TO REMOVE MATERIAL STUCK IN THE MOVING PARTS OF THIS MACHINE WHILE THE MACHINE IS PLUGGED IN AND RUNNING.**

14. **MAKE SURE THIS MACHINE IS MOUNTED SECURELY ON A FLAT, LEVEL, STURDY WORKBENCH CAPABLE OF SUPPORTING THE WEIGHT OF THE MACHINE, WORK PIECE, TOOLS, ACCESSORIES, ETCETERA.**

15. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are: lead from lead-based paints, crystalline silica from bricks and cement or other masonry products, arsenic and chromium from chemical treated lumber. Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. *(California Health & Safety Code 25249.5, et seq.)*

UNPACKING

When unpacking, check to make sure all the parts shown on the Parts List (page 13) are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

PRODUCT OVERVIEW

1. **NOTE:** Prior to operating the Tool Grinder, make sure you familiarize yourself with the main parts components and their functions. **(See Figures B, C, and Assy. Diagram.)**

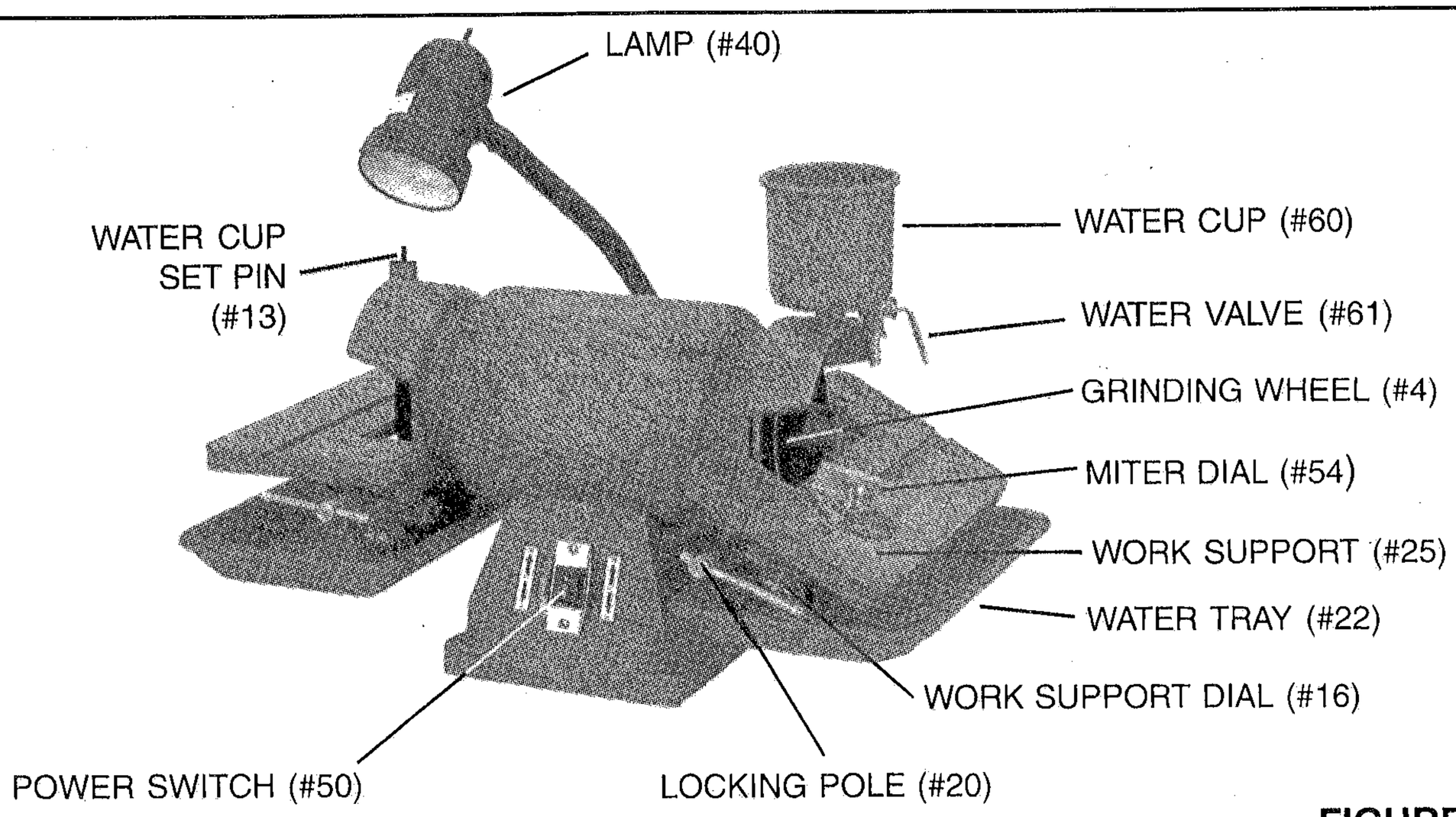


FIGURE B

Part	Function
Power Switch (#50)	Press the **top** Arrow for **"ON,"** and to turn the Grinding Wheel (part #4) in an ***upward*** direction. Press the **bottom** Arrow for **"ON,"** and to turn the Grinding Wheel (part #4 in a **downward** direction. Move the Switch to its **"O"** position to turn the machine **"OFF."**
Water Cup Set Pin (#13)	Holds Water Cup (#60) in position.
Lamp (#40)	Adjustable positioning.
Water Cup (#60)	Fits on right or left side of machine.
Water Valve (#61)	Turn horizontally for "OFF." Turn vertically for "ON."
Grinding Wheel (#4)	Do not exceed 6" maximum diameter.
Miter Dial (#54)	Adjustable: 0-45 degrees right or left.
Work Support (#25) Work Support Dial (#16) Locking Pole (#20)	Adjustable: 0-45 degrees up or down.
Water Tray (#22)	Removable for emptying/cleaning.

FIGURE C

MOUNTING INSTRUCTIONS

NOTE: For further reference to the parts mentioned below, refer to the Parts List and Assembly Diagram on pages 11 and 12 of this manual.

To Mount The Tool Grinder On A Workbench:

1. **Caution:** Make sure the Tool Grinder is mounted on a flat, level, sturdy workbench capable of supporting the weight of the Tool Grinder, accessories, and work piece.

2. **NOTE:** Four 5/16" mounting holes are located at the bottom of the Motor Base (part #37). **(See Assy. Diagram.)**

3. With assistance, set the Tool Grinder in the desired location on the top of the workbench. Using the four 5/16" mounting holes as a template, mark the four holes that are to be drilled through the top of the workbench. Then, temporarily remove the Tool Grinder.

4. Using a drill and a 5/16" drill bit (not provided), drill the four previously marked holes completely through the workbench.

5. Align the 5/16" mounting holes at the bottom of the Motor Base (part #37) with the four previously drilled 5/16" holes in the workbench. Then, secure the Tool Grinder to the workbench using four appropriate length 5/16" bolts, four lock washers, and four nuts (not provided).

ASSEMBLY INSTRUCTIONS

NOTE: For further reference to the parts mentioned below, refer to the Parts List and Assembly Diagram on pages 13 and 14 of this manual.

To Assemble The Parts Of The Tool Grinder:

1. To assemble a Grinding Wheel (part #4) on the *right* side of the Tool Grinder, remove the Shaft End Bushing (part #1). Remove the Hex Nut (part #2), and remove the Hex Socket Head Shoulder Screw (part #3). **(See Figure B, and Assy. Diagram.)**

2. Slide the Grinding Wheel (part #4) onto the Adjusting Bushing (part #27). **(See Figure B, and Assy. Diagram.)**

3. In order, reattach the Hex Socket Head Shoulder Screw (part #3), Hex Nut (part #2), and Shaft End Bushing (part #1). **(See Figure B, and Assy. Diagram.)**

4. Repeat Steps #1 through #3 to assemble a Grinding Wheel (part #4) on the *left* side of the Tool Grinder. **(See Figure B, and Assy. Diagram.)**

5. To assemble a Water Tray (part #22) on the *right* side of the Tool Grinder, slide the two mounting holes located on the Water Tray onto the two Water Tray Positioning Pins (part #24) located on the side of the Tool Grinder. **(See Figure B, and Assy. Diagram.)**

6. Repeat Step #5 to assemble a Water Tray (part #22) on the *left* side of the Tool Grinder. **(See Figure B, and Assy. Diagram.)**

7. To assemble a Work Support (part #25) on the *right* side of the Tool Grinder, align the two mounting holes located on the Work Support with the two threaded mounting holes located in the two Work Support Dials (part#16). Secure the Work Support to the two Work Support Dials, using two Work Support Fixing Screws (part #23), two Washers (part #15), and two Hex Nuts (part #14). **(See Figure B, and Assy. Diagram.)**

8. Repeat Step #7 to assemble a Work Support (part #25) on the *left* side of the Tool Grinder. **(See Figure B, and Assy. Diagram.)**

9. To Assemble the Miter Dial (part #54) on the *right* side Work Support (part #25). Slide the Miter Fixing Bracket (part #52) of the Miter Dial unit into the slot located midway in the Work Support. **(See Figure B, and Assy. Diagram.)**

10. Repeat Step #9 to assemble the Miter Dial (part #54) on the *left* side Work Support (part #25). **(See Figure B, and Assy. Diagram.)**

11. To assemble the Water Cup (part #60) on the *right* side of the Tool Grinder, slide the mounting hole located at the bottom of the Water Cup onto the Water Cup Set Pin (part #13). **(See Figure B, and Assy. Diagram.)**

12. Repeat Step #11 to assemble the Water Cup (part #60) on the *left* side of the Tool Grinder. **(See Figure B, and Assy. Diagram.)**

OPERATING INSTRUCTIONS

NOTE: For further reference to the parts mentioned below, refer to the Parts List and Assembly Diagram on pages 13 and 14 of this manual.

Basic Procedures:

1. To use the Water Cup (part #60), turn the Water Valve (part #61) *counterclockwise* all the way to its *horizontal* position. Fill the Water Cup about 3/4 full of water *only*. Then, depending on which Grinding Wheel (part #4) you will use, set the Water Cup upon the right side or left side Water Cup Set Pin (part #13). **(See Figure B, and Assy. Diagram.)**

2. The Work Support (part #25) is adjustable 0 to 45 degrees up or down. If necessary, turn the Locking Pole (part #20) *counterclockwise* to unlock the Work Support. Tilt the Work Support up or down until the desired angle of the grind is shown on the Work Support Dial (part #16). Then, turn the Locking Pole *clockwise* to lock the Work Support in position. **(See Figure B, and Assy. Diagram.)**

3. The Miter Dial (part #54) is adjustable 0 to 45 degrees to the right or left. To use the Miter Dial, slide the Miter Fixing Bracket (part #52) on the Miter Dial in the slot located midway in the Work Support (part #25). If necessaary, turn the Locking Bolt (part #56) *counterclockwise* to unlock the Miter Dial. Turn the Miter Dial either right or left until the desired angle of grind is shown by the Indicator Pin (part #55). Then, turn the Locking Bolt *clockwise* to lock the Miter Dial in position. **(See Figure B, and Assy. Diagram.)**

4. Connect the Power Cord & Plug (part #69) to a 120 Volt, 3-prong electrical outlet. **(See Assy. Diagram.)**

   ⚠ **DANGER Avoid electrical shock. Keep lamp's electrical components and all grinder electrical components dry and free of water at all times.**

5. The Lamp (part #40) features adjustable positioning. Turn on the Lamp, and adust it for best viewing. **(See Figure B, and Assy. Diagram.)**

6. To turn on the Power Switch (part #50), press the **top Arrow** for "ON," and to turn the Grinding Wheel (part #4) in an **upward** direction. Or, press the **bottom Arrow** for "ON," and to turn the Grinding Wheel in a **downward** direction. **(See Figure B, and Assy. Diagram.)**

7. Allow the Grinding Wheel (part #4) sufficient time to come to full speed. **(See Figure B, and Assy. Diagram.)**

8. Turn the Water Valve (part 61) *clockwise* to release the flow of water onto the Grinding Wheel (part #4). **NOTE:** The volume of the flow of water being released is adjustable depending on how far the Water Valve is turned *clockwise*. **(See Figure B, and Assy. Diagram.)**

⚠ **CAUTION** Always be alert to the direction the Grinding Wheel (#4) is spinning. See Power Switch (#50) and note position of top and bottom arrow - showing upward or downward rotation.

9. Place the tool you are grinding against the Miter Dial (part #54), and slowly feed the tool into the revolving Grinding Wheel (part #4). **Caution: Make sure to keep hands and fingers away from the Grinding Wheel. Also, make sure to hold the tool firmly against the Miter Dial throughout the grinding process. Failure to do so may cause the tool to be propelled by the Grinding Wheel toward your body and/or into the machine.**

10. Once the grinding process is completed, turn the Power Switch (part #50) to its **O** position to turn the machine "OFF."

11. Turn off the Lamp (part #40).

12. Disconnect the Cord & Plug (part #69) from its electrical power outlet.

13. Turn the Water Valve (part #61) *counterclockwise* all the way to its *horizontal* position to stop the flow of water.

14. Pull out to remove the Water Tray (part #22), and empty its contents.

To Grind A Tool:

1. **Caution:** Do not turn on the Tool Grinder until all angle calibrations, and machine set-up procedures, are made and the grinding process is ready to proceed.

2. Loosen the Wing Nut (part #57), and place the tool against the edge of the Miter Dial (part #54). **(See Figure D, and Assy. Diagram.)**

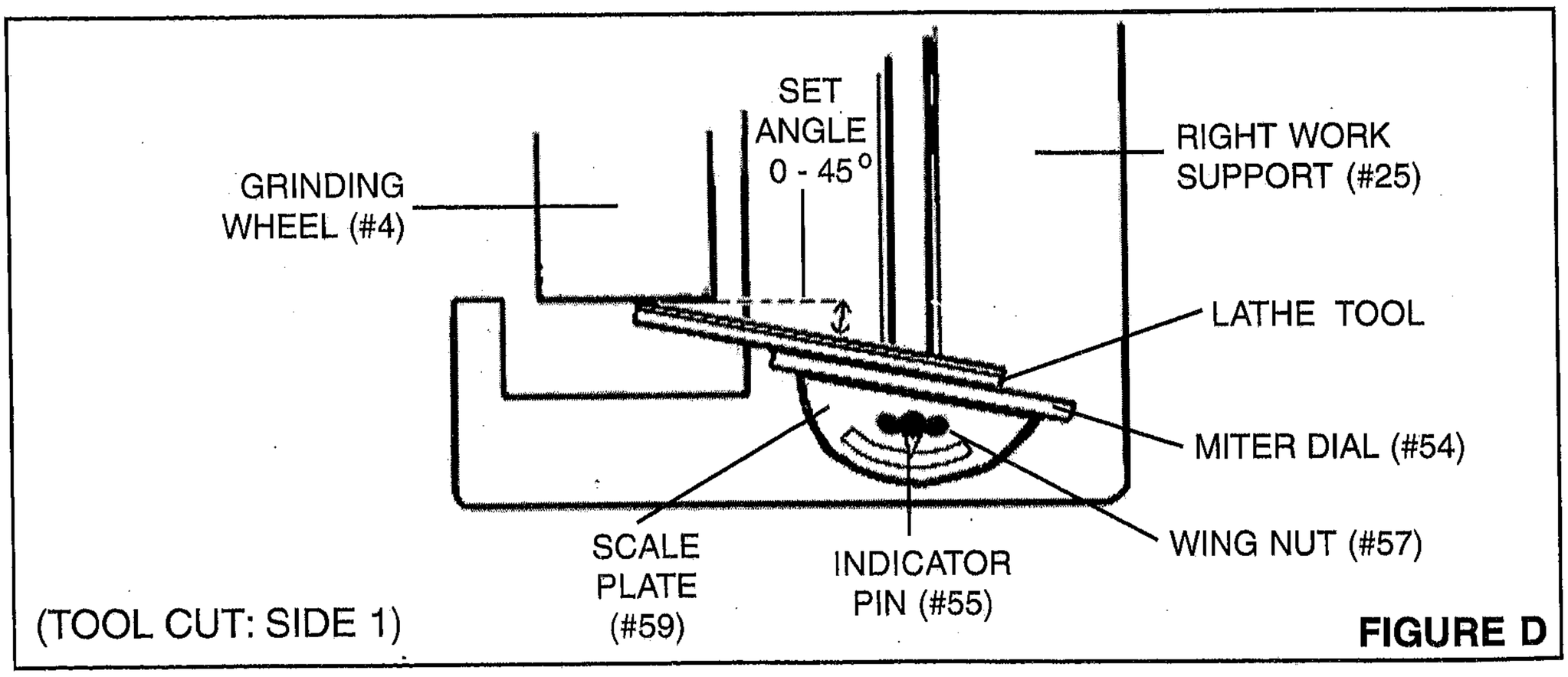


FIGURE D

3. Turn the Scale Plate (part #59) to the right or left until the desired angle of *horizontal* cut is shown by the Indicator Pin (part #55). Then, tighten the Wing Nut (part #57) to lock the Scale Plate in place. **NOTE:** Make sure the end/side of the tool that is to be ground remains touching the Grinding Wheel (part #4). **(See Figure D, and Assy. Diagram.)**

4. Loosen the Locking Pole (part #20), and tilt the Work Support (part #25) up or down until the desired angle of *vertical* cut is shown by the Work Support Dial (part #16). Then, tighten the Locking Pole in place. **NOTE:** Make sure the end of the tool that is to be ground remains touching the Grinding Wheel (part #4). **(See Figure B, and Assy. Diagram.)**

5. Back the edge of the tool away from the face of the Grinding Wheel (part #4). Turn on the Tool Grinder and allow the Grinding Wheel to come to full speed. **(See Figure B, and Assy. Diagram.)**

6. While keeping the tool firmly held against the Miter Dial (part #54), slide the tool back and forth across the face of the Grinding Wheel until the angle of grind is completed on the first side of the tool. **(See Figures B, D, and Assy. Diagram.)**

7. The remaining three sides of the tool are ground the same way as the first side in Steps #2, #3, and #4, with the possible exception that each side may require a different angle of grind. If so, change the required angles by following Steps #2, #3 and #4. **(See Figure B, D, and Assy. Diagram.)**

INSPECTION, MAINTENANCE, AND CLEANING

CAUTION: ALWAYS disconnect the Tool Grinder from its electrical supply source before performing any inspection, maintenance, or cleaning procedures.

Inspection:

1. Before each use, inspect the general condition of the Tool Grinder. Check for loose screws, misalignment, binding of moving parts, broken parts, loose or damaged electrical Power Cord, damaged Grinding Wheels, and any other condition that may affect its safe operation. If abnormal noise or vibration occurs during its use, disconnect the Tool Grinder from its electrical supply source immediately and have the problem corrected before further use. **Do not use damaged equipment.**

Maintenance:

1. As a result of normal use, Grinding Wheels (part #4) may become cracked, grooved, rounded, chipped, out of true, or loaded with foreign material. Damaged Grinding Wheels should be immediately replaced. If the Grinding Wheel is replaced, make sure its rated speed is **at least as high as the rated RPM (3,400) of this Tool Grinder.**
2. Grinding Wheels (part #4) must be *dressed* to keep them sharp and clean. As with sandpaper, Grinding Wheels become clogged with metal particles and dull with use. Dull Grinding Wheels rub the workpiece rather than cut, which results in increased friction, higher temperatures, and burned tools. A sharp Grinding Wheel will cut quickly with a "hissing" sound and with very little heat by comparison to a dull Grinding Wheel. A dull Grinding Wheel produces a "rapping" sound created by a loaded up area of metal particles on its cutting surface. A **Wheel Dressing Tool** (not provided) must be used to make the cutting edges of the abrasive grit on the Grinding Wheel sharp and clean. A Wheel Dresser sharpens and cleans by breaking off the clogged and dull outer layer of grit. **For information on the set-up and use of a particular Wheel Dresser consult the Wheel Dresser *manufacturer's manual*.**

Cleaning:

1. If necessary, wipe with a damp cloth. You may use a mild detergent or non-flammable solvent.

2. Once clean, lubricate all moving parts, except the Grinding Wheels (part #4), with a light weight oil.

3. When storing, keep the Tool Grinder covered with a clean cloth cover.

PLEASE READ THE FOLLOWING CAREFULLY

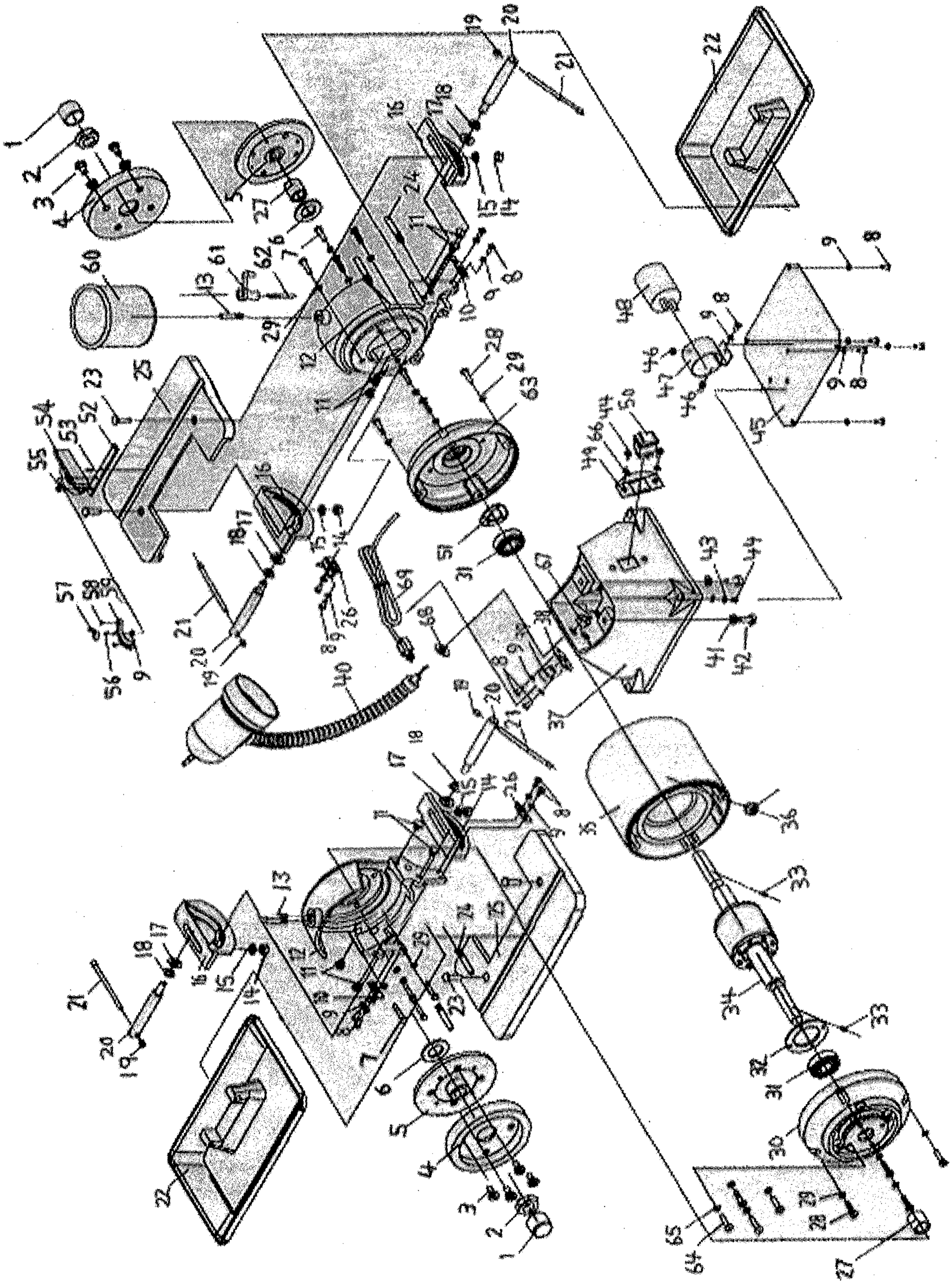
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

PARTS LIST

Part #	Description	Qty.	Part #	Description	Qty.
1	Shaft End Bushing	2	36	Cord Bushing	1
2	Hex Nut (M18)	2	37	Motor Base	1
3	Hex Socket Head Shoulder Screw	8	38	Cord Clip Fixing Plate	1
4	Grinding Wheel	2	39	Cord Clip	1
5	Connection Plate	2	40	Lamp	1
6	Water Proof Rubber Washer	2	41	Lock Washer (8mm)	2
7	Hex Bolt (M6 x 25)	8	42	Hex Bolt (M8 x 20)	2
8	Philips Screw (M5 x 10mm)	16	43	Toothed Lock Washer (4mm)	1
9	Washer (5mm)	17	44	Philips Screw (M4 x 10mm)	3
10	Pointer I	2	45	Bottom Cover	1
11	Dial Set Pin	8	46	Hex Nut (M5)	2
12	Wheel Cover	2	47	Capacitor Fixing Ring	1
13	Water Cup Set Pin	2	48	Capacitor	1
14	Hex Nut (M8)	4	49	Switch Fixing Plate	1
15	Washer (8mm)	4	50	Switch	1
16	Work Support Dial	4	51	Wave Lock	1
17	Washer (10mm)	4	52	Miter Fixing Bracket	1
18	Lock Washer (10mm)	4	53	Straight Pin	1
19	Handle Moveable Pin Bushing	4	54	Miter Dial	1
20	Locking Pole	4	55	Indicator Pin	1
21	Handle Moveable Pin	4	56	Locking Bolt	1
22	Water Tray	2	57	Wing Nut	1
23	Work Support Fixing Screw	4	58	Nameplate Rivet (2.5 x 4mm)	2
24	Water Tray Positioning Pin	4	59	Scale Plate	1
25	Work Support	2	60	Water Cup	1
26	Pointer II	1	61	Valve	1
27	Adjusting Bushing	2	62	Water Pipe	1
28	Philips Screw (M6 x 25)	8	63	Right Motor End Cap	1
29	Lock Washer (6mm)	16	64	Hex Bolt (M5 x 30mm)	4
30	Left Motor End Cap	1	65	Lock Washer (5mm)	4
31	Bearing (180204)	2	66	Lock Washer (4mm)	2
32	Bearing Fixing Ring	2	67	Hex Nut (M12 x 1)	1
33	Spring Type Straight Pin	2	68	Washer (12mm)	1
34	Rotor	1	69	Cord & Plug	1
35	Stator	1			

NOTE: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

ASSEMBLY DIAGRAM



SKU 46727